TUBERCULOUS CECAL TUMOR

By CLARENCE A. JOHNSON,* M. D., *Los Angeles*

There are two forms of tuberculosis of the caecum which may be met with: (1) Tuberculous ulceration of the caecum; (2) hyperplastic tuberculosis of the caecum. Hyperplastic tuberculosis of the ileo-caecal region is a remarkable condition which imitates a new growth in the great thickening of the intestinal wall and in producing stenosis.

Tuberculous infection may attack either the mucous membrane, the submucous tissue, or the muscular coat and the subserous layer.

Tuberculous ulceration of the caecum usually occurs as a terminal complication of advanced phthisis, and there is little possibility of treating it by surgical means.

Case report.

DISCUSSION *by C. P. Thomas; J. F. Percy; O. O. Witherbee; C. E. Phillips; Andrew S. Lobingier; C. W. Anderson; W. L. Huggins, Los Angeles.*

TUBERCULOSIS, limited entirely to the caecum, occurs rarely, being about 8 per cent of the cases involving the intestine. Primary infection of the mucous membrane from tuberculous milk, meat, or butter occurs very rarely in adults. Secondary tuberculosis of the intestine, due to the swallowing of sputum containing tubercle bacilli, is very common, and some authorities claim that over 50 per cent of the fatal cases of pulmonary tuberculosis have tuberculous involvement of the intestine. It may be, however, that in a large majority of the people who suffer from follicular ulceration of the small bowel it may be due to the pyogenic organisms contained in the sputum they swallow; and that every ulcer found in the small intestine is not necessarily tuberculous. These ulcerations, however, render the bowel more susceptible to tuberculous infection, and they eventually cause a mixed infection ulceration.

Infection of the mucous membrane of the intestine may possibly occur by the extension of the tuberculous process from the peritoneum, or as the result of the discharge from the tuberculous glands or abscesses in the lumen of the intestine; but these modes of infection are quite exceptional.

SITUATION

Tuberculous ulceration of the intestine is commonest in the lower part of the ileum and, like typhoid fever, is more common around the ileocecal valve, and may extend into the appendix, giving rise to appendicitis, or into the colon. The colon may indeed be affected without the ileum being attacked, as was present in the case to be reported.

ANATOMICAL CHARACTERS

The tubercles generally begin either in Peyer's patches or in the solitary glands, and after undergoing caseation appear as small yellowish spots, which soften down in the center, run into each other, and by opening into the intestine give rise to the earliest stage of tuberculous ulcer. The lymphoid and other tissues around are swollen from extension of the inflammatory process, and the edges of the ulcers are raised. The ulcer extends by the softening of the surrounding tubercles, while at the same time infiltration of the coats of the intestine is proceeding. The lymphatic vessels become affected, and local peritonitis is set up. The base of the ulcer thus becomes thickened by tuberculous inflammation in its muscular and serous wall, and small white, or even yellow, tubercles can be seen on the peritoneal surface, which appears somewhat opaque and thickened. The base of the ulcer is thus protected against perforation, and may be considerably thicker than the healthy parts of the intestine.

The ulcers, which at an early stage are small and round, become large and irregular in outline. Like most chronic ulcers, they are apt to run transversely round the lumen of the bowel, this extension being preceded by tuberculous infection of the lymphatic vessels, the circular course of which is shown up by caseous spots.

There are two forms of tuberculosis of the caecum which may be met with: (1) Tuberculous ulceration of the caecum; (2) hyperplastic tuberculosis of the caecum. Hyperplastic tuberculosis of the ileo-cecal region is a remarkable condition which imitates a new growth in the great thickening of the intestinal wall and in producing stenosis. It is very chronic and has been thought to be due to infection with attenuated tubercle bacilli and other organisms, a mixture of tuberculous and simple inflammatory lesions resulting (Lartigau), or to bovine tuberculosis. The caecum and the ileo-caecal valve are the usual situations, and may extend for a short distance into the ileum.

The symptoms are usually those of chronic appendicitis accompanied often by alternating diarrhea and constipation, the stools showing blood reactions. If allowed to continue, numerous fistulae form and either discharge externally or into the intestine. The hypertrophic form, which is of more frequent occurrence, usually begins with systemic symptoms as anorexia, various phenomena of indigestion, frequently giving symptoms which are difficult to differentiate clinically from duodenal ulcer, and only showing vague localized symptoms in the right iliac fossa. The tumefaction is usually palpable, hard, frequently nodular and sausage-shaped. It is not particularly tender to pressure. Obstructive symptoms supervene, and after a course of from one to three years, usually terminate the life of the patient if unrelieved.

DIAGNOSIS

An important factor is the existence of tuberculous disease of the lungs or peritoneum. The passage of blood may occur in simple ulceration of the intestine, but in the hyperplastic form practically never. The x-ray and fluoroscope are invaluable aids in diagnosis. Age is rather an important factor, being usually in people from 20 to 40.

DIFFERENTIAL DIAGNOSIS

The differential diagnosis is of importance from the prognostic standpoint. It is usually fairly easy to differentiate from appendicits on account of the slowness of onset and the presence of a dense mass. Actinomycosis should be thought of, but it is quite rare, and if any tissue or fluid can be obtained the actinomyces can be found. The most difficult dis-

*Clarence A. Johnson (523 West Sixth Street, Los Angeles), received his M. D. degree from Rush Medical College, 1910. He limits his practice to Surgery.

tinction is from malignant growths. In cancer the entire course is, as a rule, much more rapid, stenosis intervenes much more rapidly, and the tumor is more irregular.

PATHOLOGY

Tuberculous infection may attack either (1) the mucous membrane, (2) the submucous tissue, (3) or the muscular coat and the subserous layer. In tuberculosis of the submucous layer there is a round-celled infiltration interspersed with giant cells in the submucous tissues. The mucous membrane itself is not ulcerated in the hyperplastic form, but, according to Tuffer, when the lesion heals it contracts and produces diaphragm-like strictures. Tuberculosis of the muscular and subserous coats produces the chronic hyperplastic tuberculous tumors of the intestines. In these cases the muscularis is greatly thickened, owing to the deposition of the dense fibrous tissue, but the chief deposit of this tissue is beneath the serous membrane, which may reach a thickness of from one-half to one inch.

TREATMENT

Tuberculous ulceration of the caecum usually occurs as a terminal complication of advanced phthisis, and there is little possibility of treating it by surgical means.

Treatment for hyperplastic tuberculosis of the caecum causing tumor formation and obstruction from stricture of the bowel, and usually mistaken for malignant disease, is complete extirpation with resection of the glands as far back as the origin of the ileocolic artery. The intestine should be resected, eight inches of the ileum, and at the junction of the upper and middle third of the ascending colon so as to include the right colic artery and its accompanying glands. Lateral or end anastomosis between the lower ileum and ascending colon should follow, or be short-circuited by lateral anastomosis. The best results have followed resection.

CASE REPORT

A male, 22 years of age, white, entered the General Hospital on April 26, 1923, with a swelling of the fifth metacarpophalangeal joint of the left hand. Patient states that five years ago (1918) he injured this finger and it continued to swell until it became an inch in diameter, sensitive to touch, but not sore. There was no drainage of pus discovered at this time. Soon after this the patient had influenza with double pneumonia following, which left him with pulmonary tuberculosis. He went to El Paso, Texas, for treatment of the tuberculosis and made a satisfactory recovery. While in El Paso, in 1920, the lesion on his finger was removed, which healed, apparently without any infection. It began to grow soon after this, however, and was removed again early in 1921. There were no signs of its recurrence again until January, 1923, and three months from this time he entered the General Hospital for its relief.

Patient has had whooping cough, measles, mumps, and influenza in 1918, which left him with pulmonary tuberculosis. He has had no accidents and only the operations mentioned above. His family history is negative. Father and mother living and well. Has never had any brothers or sisters.

The patient is a young man, fairly well nourished, who walked into the hospital apparently in no pain. Temperature, pulse, and respiration normal. Breath-sounds not accentuated; no definite areas of dullness, but slightly duller over both apices. Few crepitant rales heard over right upper lobe near inner angle of the scapula; fremitus normal. Heart normal. During this examination, a tumor mass was discovered in the right lower quadrant of the abdomen, which was irregular and tender on deep palpation; most easily movable to the left horizontally, and adherent to the structures below. There is a slight rigidity of the muscles on the right side. No other pathology noted. Genito-urinary negative. The extremities are normal as to adenopathy, motion, and arthritis, with the exception of the upper left, which shows a swelling on the fifth metacarpophalangeal joint on the dorsal surface. This swelling is red, warm, slightly fluctuating, and upon pressure a brownish pus exudes. Reflexes: Plantar, anterior tibial, knee-jerk, abdominal and forearm not exaggerated and are responding equally on both sides.

Laboratory Findings—Urine: Quantity passed in twenty-four hours, 1500 cc.; color, straw; specific gravity, 1010; reaction, acid; albumen, 0; sugar, 0; no casts or pus cells found. Blood: Hemoglobin, 70 per cent; red cells, 3,200,000; white cells, 6000; polys., 52 per cent; small monos., 18 per cent; large monos., 30 per cent; Wassermann, negative. X-ray: X-ray of hand showed rarefaction at the distal extremity of the fifth metacarpal at the site of the previously reported lesion, giving appearance of operative interference. X-ray of colon, after barium enema, showed annular filling defect of ascending colon at the site of the palpable mass. Gives appearance of neoplasm.

Pre-Operative Diagnosis, Indications for Operation, and Operative Procedure—Caecum was resected by myself on May 14, 1923, and was tuberculous. Indications: Tumor mass and partial obstruction of the bowel. Procedure: A right rectus muscle-splitting incision was made, opening directly upon the mass in the right lower quadrant, which revealed tuberculosis of the appendix and caecum. Appendix ulcerated at base. Tubercles encircling the ascending colon to within 10 cm. of the hepatic flexure. The entire mass was bound down to the posterior abdominal wall. The mass was easily dislodged and the ascending colon, caecum, appendix, and 6 cm. of distal end of ileum removed by cautery. Murphy button, end of ileum, and side of colon anastomosis performed. Wound closed by No. 1 catgut double on peritoneum; No. 1 chromic double on fascia; four silkworm sutures and dermol; three rubber dam drains inserted around the resected area.

Gross and Microscopic Description of Tissue Removed—Specimen consists of caecum, small portion of ascending colon, appendix, and 6 cm. of ileum. Portions of omentum are plastered to the caecum, and it is very firm. The surface is ragged and of a dark red color. The wall of the caecum is greatly thickened and firm, but not nodular, the average thickness 7 mm. It is uniform and almost cartilaginous. This thickness ends abruptly at the ileo-caecal valve, and distally it tapers out to where the first portion of the ascending colon resumes its normal thickness. The mucosa is polypoid with numerous small, firm tongue-like prolongations of mucosa. There is no ulceration of mucosa. Ileum does not appear to be altered; neither does ascending colon. Microscopic examination shows a picture of one of the infectious granulomata, probably tuberculous.

Final Diagnosis—Tuberculosis of the caecum.

Progress Notes—Patient did not take ether well; had 15 minims of camphor in oil, 2 grains of caffein sodium benzoate, and 1300 cc. of normal saline during operation. Returned to ward. Pulse 88; respiration 20. Had four hypodermics of morphine, one-fourth grain, following operation. Had hypodermoclysis for the first few days—in all about 5000 cc. of normal saline, together with Murphy drip of 5 per cent soda and glucose. Temperature rose to 103.6 on the third day (May 17), but gradually subsided and was normal on the seventh day (May 20), and remained so throughout his convalescence. Patient voided the morning after the operation, and continued to do so normally thereafter. Patient received nothing by mouth until the eighth day after the operation, when fruit juices were allowed. Murphy button passed on June 2 with considerable leakage about the incision, which continued until he left the hospital on June 3 on full diet.

Condition on Discharge—Patient was feeling much improved, but was to secure more favorable quarters where he might receive the application of the sun to the wound.

Follow-up Notes—I saw patient again on July 1, 1923, when he stated that he had gained about ten pounds. He reported to me again on September 4, four months after

operation, stating that he had gained thirty pounds since his operation. Reported to me again on March 7, 1924, stating that he had been working for four or five months and that he was feeling as well as he ever did.

523 West Sixth Street.

DISCUSSION

C. P. THOMAS, M. D. (607 South Hill Street, Los Angeles)—This paper brings out very well the two types of tuberculosis of the caecum, and Johnson is to be congratulated on having brought out the subject in the thorough manner in which he did. Most of these patients come to us late, and after tumor formation and the typical sausage-shaped mass, which Johnson described in his paper, is found. I wish to commend the use of the Murphy button as Johnson used in the case he reported, as it can be done more quickly and with much less trauma and risk of infection than any other method.

J. F. PERCY, M. D. (1030 South Alvarado Street, Los Angeles)—I would like to ask Dr. Johnson what he considers the origin of the interesting tumor which he reported, whether from the hand or from the lungs? Some years ago I treated a 6-year-old child suffering from a tuberculous involvement of the bones and soft structures of the hand and wrist. There was a large area of destruction, so that not only the tendons, but the bones were exposed. While still under treatment for the hand, a tubercular mass developed in the caecum of the same general type that Johnson has reported. This I removed with a very satisfactory result, and the patient is still living.

I especially want to recommend the use of the x-ray in the treatment of superficial tubercular lesions. In the child which I have just mentioned, not only was the condition cured, but she ultimately had a most useful hand.

O. O. WITHERBEE, M. D. (523 West Sixth Street, Los Angeles)—Tuberculosis of the caecum can be most easily confused with chronic appendicitis, as Johnson has brought out. It is amazing how well a patient may get along with a contracted lumen of the small bowel. One of my patients, who is still living, had at the time of the operation (fifteen years ago) several contracted areas of the small intestine.

CHARLES E. PHILLIPS, M. D. (523 West Sixth Street, Los Angeles)—I wish to emphasize the importance of a thorough resection in these cases, getting well back into normal tissue, as they do not heal well and it is always advisable to leave all tissues as normal as possible.

ANDREW S. LOBINGIER, M. D. (Merritt Building, Los Angeles)—I wish to emphasize the statement of Dr. Phillips, urging the necessity of doing a wide resection, carefully walling off the area to prevent soiling, before any attempt is made to remove the bowel. These wounds repair slowly in most instances. I also wish to congratulate Dr. Johnson on the success he had with the case reported, as we all realize that the majority of cases of this character do not lead to such a happy result.

I have observed a great many of these patients and found that ulceration was much more common than we have been led to suspect.

C. W. ANDERSON, M. D. (523 West Sixth Street, Los Angeles)—I have had occasion lately to see two patients with tumor mass in the right lower quadrant, which resembled the condition described by Johnson.

The first had been diagnosed appendix abscess, and had absolutely refused operation before I saw her. Under expectant treatment the temperature and pulse became normal, and the pain and tenderness cleared up; but the tumor remained until a dose of castor oil was given, when it promptly disappeared. Following this the patient was well for several weeks, and then had a similar attack with recurrence of the mass, which again disappeared after a purgative.

Operation later revealed a retro-caecal appendix, which apparently had doubled the caecum on itself in such a way as to favor the accumulation of fecal matter.

The other patient, a man 50 years of age, had pulmonary tuberculosis. The disease became arrested and he remained well until one year ago, when he had a hemorrhage from a duodenal ulcer. Under Sippy treatment this healed, and x-rays taken recently show no abnormalities in this region. Recently, he was taken sick with what was apparently sub-acute appendicitis. Under starvation and ice-bag treatment the temperature and pulse had become normal when I first saw him, three days after the onset of the attack. There was a slightly tender mass in the right lower quadrant. Castor oil, given several days later, failed to affect this mass, and x-rays taken three weeks later show a lack of filling of the caecum on its inner side, and I believe that this is a case of hyperplastic tuberculosis of the caecum.

WALTER L. HUGGINS, M. D. (523 West Sixth Street, Los Angeles)—I saw a doctor's wife some years ago who had been at a celebrated clinic with a general tuberculous involvement of the intestines which matted them down, and all that could be done was an anastomosis. This was ten years ago, and the patient is apparently well at this time—which seems to prove that opening an abdomen will often cure a condition of this kind.

DOCTOR JOHNSON (closing)—I wish to thank the gentlemen for the discussion of my paper. In answer to Dr. Percy's question regarding the origin of the infection in the case reported, I am inclined to believe that it came from the hand, as it came before he had the influenza and tuberculosis in 1918. In reply to Dr. Lobingier's suggestion of ulceration of the mucosa, I will state that my experience has been rather limited in this particular condition, but I intended my discussion particularly for the hyperplastic tumor, in which, I am led to believe, ulceration is not a common occurrence.

QUESTIONABLE OPERATIONS AND TECHNIQUE

By FREDERICK A. RHODES,* M. D., *Los Angeles*

Are there many unnecessary operations? If so, who is to blame? Some reasons that patients forsake the regular physicians and visit various cultists.

Are some of the popular major operations of questionable value? Who shall judge as to the value of certain operations?

Some errors of technique. Status of Cesarean section and other methods of rapid delivery. Value of endocrine therapy in surgical conditions.

How can we obtain more complete records of all operations showing the cause and findings? Should such records be made a part of the state's vital statistics?

A better knowledge of pathologic-physiology and a more charitable relation between medical men desirable.

EVERY surgeon has at some time wished that he had not performed a certain operation. It may have been because a tonsil had bled too much, or one of the ureters was cut while doing a difficult hysterectomy.

One reason surgery is not respected by some is, that many attempt difficult operations without having had the proper training. It is difficult for the newcomer to California to tell whether Dr. Smith,

*Frederick A. Rhodes (420 Wright & Callender Building, Los Angeles), M. D. University of Pittsburg, 1900. Formerly Professor of Physiology, Medical, Dental and Pharmacy Departments, University of Pittsburgh. Practice limited to Surgery. Hospital connections: Hollywood Hospital. Publications: Applied Physiology (Medical Press, Pittsburgh, 1908), The Next Generation, Richard Badger Company, Boston, Mass., 1915; The Cautery in Treatment of Jacksonian Epilepsy (Jour. A. M. A., Sept. 23, 1916); Care of Pregnant Woman (N. Y. Times, Aug., 1910); Ante-Operative Diagnosis and Findings in Abdominal Surgery (Bulletin Allegheny County, Pa., Med. Society, Feb., 1916); Introspection in Gynecology (American Journal of Obstetrics, 1915); Emergency Abdominal Operations (Bulletin Allegheny County, Pa., Medical Society, June 1914); Diagnosis of Ectopic Pregnancy (Amer. Jour. Obstetrics, 1918); Carbohydrate Metabolism (American Medicine, Dec. 10, 1904); Physiology of Temperature, etc. (Amer. Jour. Obstetrics, 1906), etc.